This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 **(Currently Amended)** A detector for sensing variations in properties of a fluid flowing in a boundary layer adjacent to the detector, the detector comprising an optical waveguide having a core layer covered by a cladding layer defining a planar surface with an optical grating pattern thereon, ~~whereby~~ the optical grating pattern being exposed to the flowing fluid wherein when a beam of laser light is directed through the detector as an input while the fluid is flowing over the optical grating, variations in an output of the beam of laser light are indicative changes in fluid pressure or density in the boundary layer adjacent to the grating of the optical waveguide.

Claim 2 **(Previously Presented** A detector according to claim 1 wherein the optical waveguide is an optical fiber with a D-shaped cross section defining a planar surface and wherein the core is adjacent to the planar surface and the grating is formed in the cladding.

Claim 3 **(Previously Presented)** A detector according to claim 2 wherein the grating has a first portion and a second portion, the second portion being spaced from the first portion by a selected distance.

Claim 4 **(Previously Presented)** A detector according to claim 2 wherein the optical grating pattern is slanted at an angle with respect to the planar surface of the fiber.

Claim 5 **(Previously Presented)** A detector according to claim 4 wherein the angle is 45°.

Claim 6 **(Cancelled)**

Claim 7 **(Cancelled)**

Claim 8 **(Cancelled)**

Claim 9 **(Cancelled)**

Claim 10 **(Cancelled)**

Claim 11 **(Cancelled)**

Claim 12 **(Cancelled)**

Claim 13 **(Currently Amended)** A method for sensing variations in properties of a fluid flowing in a boundary layer adjacent to a detector, the method comprising:

directing a beam of laser light through an optical waveguide having a core layer covered by a cladding layer and defining a planar surface with an optical grating pattern thereon, and detecting variations in an output of the beam of laser light indicative changes in fluid pressure or density in the boundary layer adjacent to the grating of the optical waveguide while the fluid is flowing over the grating pattern.

Claim 14 **(Previously Presented)** A method according to claim 13 wherein the optical waveguide is an optical fiber with a D-shaped cross section and wherein the core is adjacent to the planar surface and the grating pattern is formed in the cladding.

Claim 15 **(Previously Presented)** A method according to claim 14 wherein the grating pattern has a first portion and a second portion, the second portion being spaced from the first portion by a selected distance.

Claim 16 **(Cancelled)**

Claim 17 **(Cancelled)**

Claim 18 **(Cancelled)**

Claim 19 **(Cancelled)**

Claim 20 **(Cancelled)**

Claim 21 **(Cancelled)**

Claim 22 **(Cancelled)**